

## MASS- ENERGY QUESTIONS

NAME: \_\_\_\_\_

1. The energy produced by the complete conversion of  $2.0 \times 10^{-5}$  kilogram of mass into energy is

1) 1.8 TJ                      3) 6.0 kJ  
2) 6.0 GJ                      4) 1.8 MJ

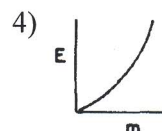
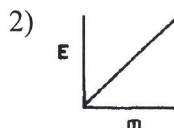
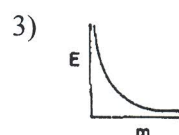
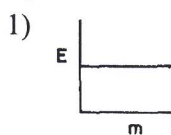
2. The energy equivalent of the rest mass of an electron is approximately

1)  $8.2 \times 10^{-14}$  J  
2)  $8.5 \times 10^{-28}$  J  
3)  $2.7 \times 10^{-22}$  J  
4)  $5.1 \times 10^5$  J

3. What is the energy equivalent of a mass of 0.026 kilogram?

1)  $2.34 \times 10^{15}$  J  
2)  $2.3 \times 10^{15}$  J  
3)  $2.34 \times 10^{17}$  J  
4)  $2.3 \times 10^{17}$  J

4. Which graph best represents the relationship between energy and mass in the mass-energy equation?



5. Which particle would generate the greatest amount of energy if its entire mass were converted into energy?

1) proton                      3) alpha particle  
2) neutron                      4) electron

6. A tritium nucleus is formed by combining two neutrons and a proton. the mass of this nucleus is  $9.106 \times 10^{-3}$  universal mass unit less than the combined mass of the particles from which it is formed. Approximately how much energy is released when this nucleus is formed.

1)  $8.48 \times 10^{-2}$  MeV  
2) 2.73 MeV  
3) 8.48 MeV  
4) 273 MeV